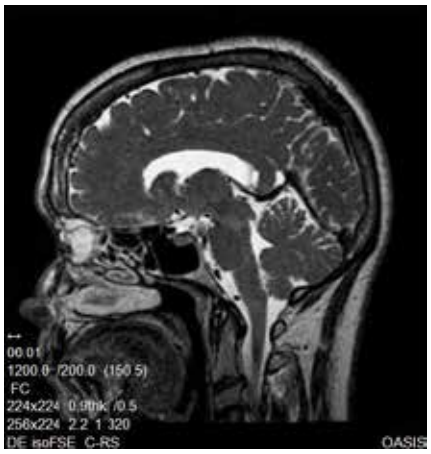
HITACHI
Inspire the Next

OASIS™ CLINICAL CAPABILITIES

MRI, well understood to provide outstanding tissue sensitivity and specificity, is the leading neurological diagnostic tool for evaluating a full range of neurological conditions including recurring headaches, seizures, lesion detection, multiple sclerosis, stroke assessment, and other complex pathologies. To support the growing demands of neurological imaging Oasis provides high resolution, fast motion compensated visualization of anatomical structures for obtaining detailed images of the brain, nerve tissues and spinal structures in multiple planes for the diagnosis of lesions, demyelinating disease and other disorders.

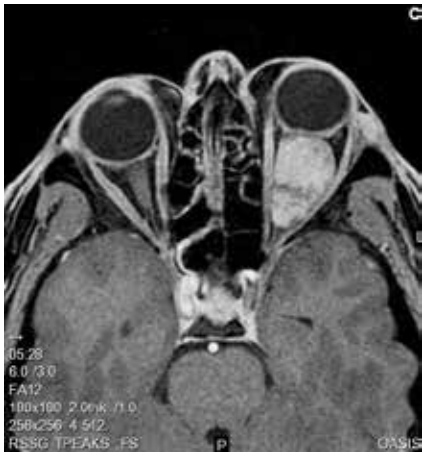
Oasis MRI neurological capabilities continue to advance and now include:

- **RADAR -** Motion compensation in any plane and anatomical region
- **ADAGE -** Enhanced gray/white matter contrast and high SNR/CNR acquisitions with sub-millimeter resolution for exquisite detail of cervical spine
- **isoFSE -** Isotropic sub-millimeter 3D volume images can be reformatted into any plane and maintain acquired resolution
- **AutoPose -** Automatic slice location and positioning provides consistent results from patient to patient with high workflow



Sagittal isoFSE isotropic 0.9mm thick acquisition with 3mm axial and coronal reformats

3D primeFSE 1.5mm slices for cranial nerve detail

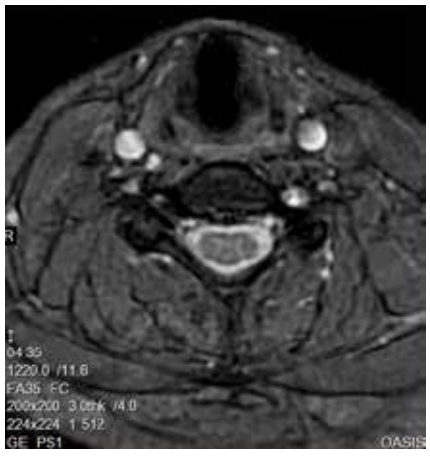


T1W gradient echo with uniform fat saturation

High resolution and thin slice acquisition with short scan time

primeFSE to minimize distortion from metallic implant

RADAR FSE reduces voluntary and involuntary motion effects



ADAGE provides exceptional nerve root and spinal visualization

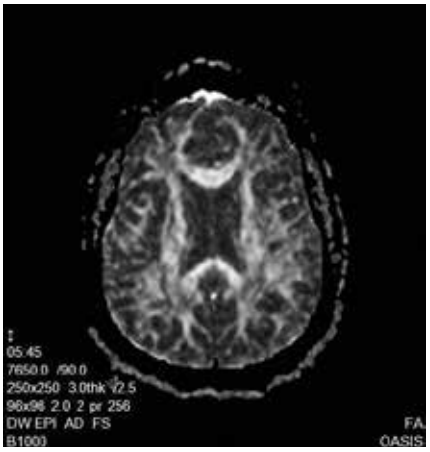
Going beyond anatomical assessment neurological imaging requires the ability to quantify flow and function of brain tissues and fluids. Oasis provides physiological and quantitative analysis that delivers insights into characteristic differences of normal and diseased tissue. Special techniques such as functional magnetic resonance imaging (fMRI) and spectroscopy provide information about the function and chemical metabolites of the brain aiding in early stage disease diagnosis.

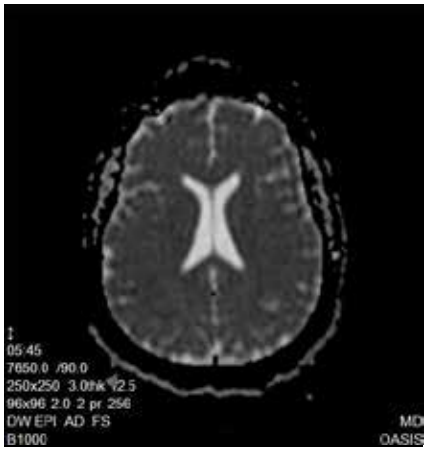
Oasis advanced suite of molecular and functional imaging includes:

- **Blood Sensitive Imaging (BSI) -** Susceptibility imaging for micro-bleeds and brain trauma assessment
- **Diffusion Tensor Imaging (DTI) -** Multi-directional analysis of white matter fiber tracts to assess the amount of diffusivity and degree of anisotropy using multi-axial acquisitions for tractrography analysis
- **fMRI -** Export and analyze high temporal resolution acquisitions using industry leading analysis software applications on a remote workstation
- **Advanced NeuroSuite -** Brain perfusion imaging capability for detection of ischemic brain tissue and analysis of blood flow dynamics using CBV, CBF, MTT maps

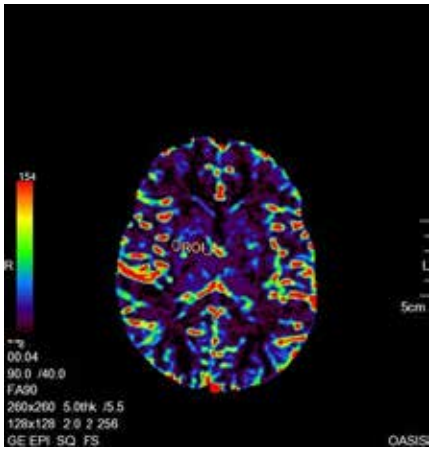
ADVANCED NEUROLOGICAL IMAGING

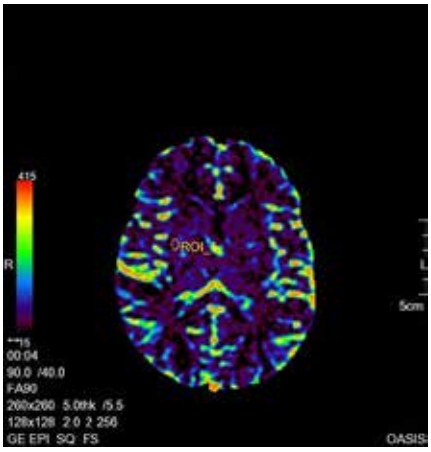
Blood Sensitive Imaging (BSI) for T2*W assessment of susceptibility

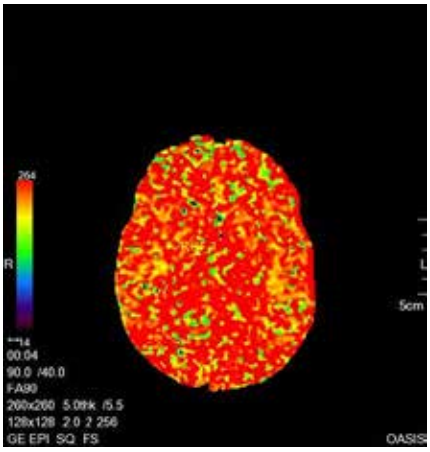




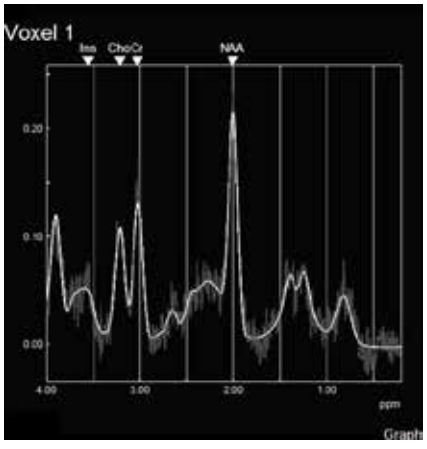
Diffusion Tensor Imaging provides Fractional Anisotropy and Mean Diffusivity maps

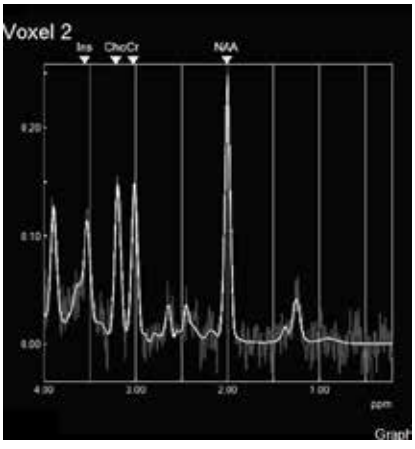






Advanced Neurosuite with analysis graph and CBV, CBF and MTT maps



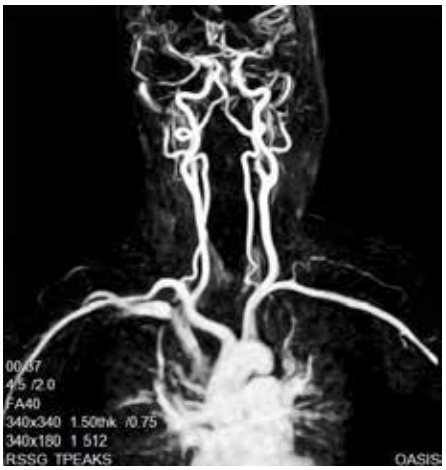


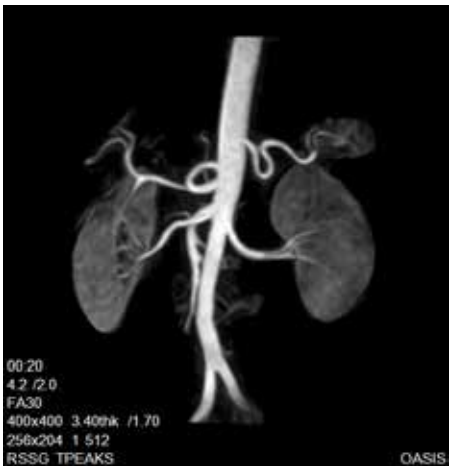
Dual Voxel Spectroscopy with single screen display of spectral graphs and identified metabolites

Oasis supports the diverse demands of MR Angiography (MRA) and MR Venography (MRV) imaging with techniques designed for ease of use to simplify the acquisition process, while sophisticated image processing tools provide 3D visualization of vasculature. Conventional 2D/3D TOF sequences for Circle-of-Willis and carotid artery imaging provide complete neurovascular assessment. New capabilities in non-contrast MRA allow imaging without needle sticks, while reducing risks and cost associated with contrast.

Whole body vascular imaging capabilities include:

- **VASC-ASL -** Arterial spin labeling technique that tags inflowing blood, creating bright signal to aid in the diagnosis of stenosis or occlusion of abdominal and chest arteries and veins
- **VASC-FSE -** Utilizes a 3D primeFSE with IR pulse sequence to scan in both systole and diastole blood cycles, and subtracts these images to depict peripheral arteries
- **FLUTE and TRAQ -** Simplify bolus enhanced MRA for high reproducibility and ease of use
- **Signal Intensity Ratio (SIR) Map -** Provides quantitative carotid plaque characterization when used with Hitachi's RADAR-SE motion compensation acquisition



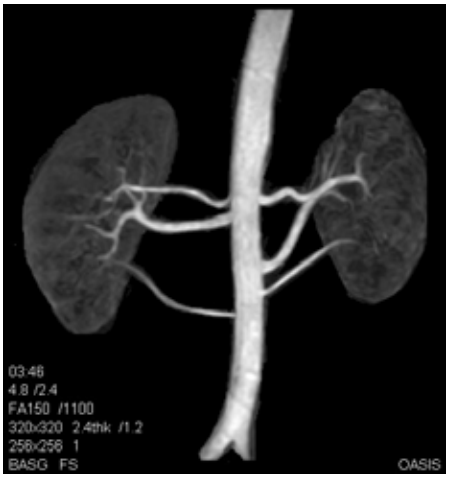


FLUTE using TPEAKS enables consistent arterial phase capture and simplified bolus timing

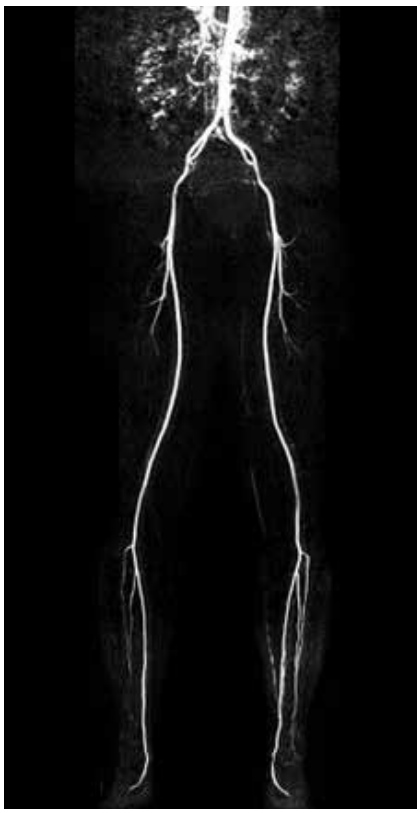
Auto table step allows multi-station vascular run-off studies

Time Resolved MRA enables effortless vascular depiction without timing concerns

Volume rendered TOF provides exceptional 3D vessel depiction



VASC-ASL non contrast MRA of renal and carotid arteries



VASC-FSE Non-contrast MRA

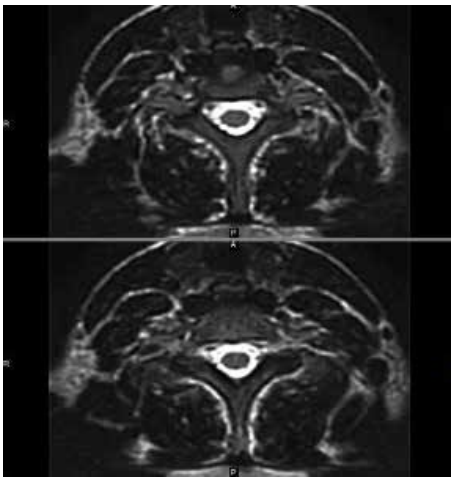
MRI provides high signal to noise (SNR), high spatial resolution, and superior contrast differentiation for the evaluation of complex musculoskeletal anatomies and pathologies. Oasis provides a versatile imaging suite for high quality, thin slice, small field of view imaging complimented by dedicated anatomy coils. The open architecture of Oasis enables the unique ability to position all patients comfortably at iso-center, which provides a significant benefit in upper and lower extremity imaging.

Oasis provides leading musculoskeletal imaging capabilities including:

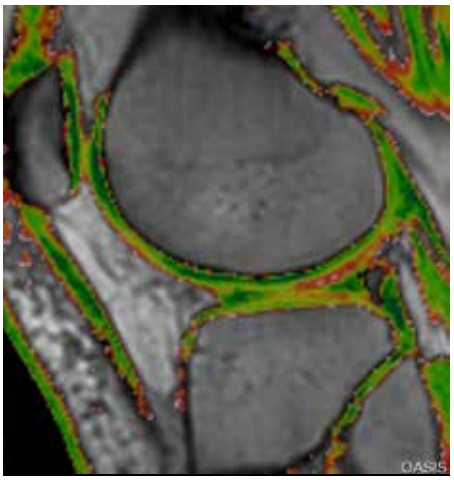
- **ADAGE -** Combination of multiple echoes in a gradient echo acquisition provides high SNR and CNR in a single acquisition for exceptional cartilage differentiation
- **isoFSE -** One acquisition, with flexibility to reformat into any plane or slice thickness
- **RF Fat Saturation -** Consistent uniform fat suppression ranging from large FOV for hips and spines to small FOV fingers and toes
- **T2 RelaxMap -** Quantitative T2 imaging for superficial and intermediate layer cartilage assessment within a morphological image
- **primeFSE -** User selectable receiver bandwidth enables exquisite image quality in the presence of prostheses or implants with a very fast scan time

Extra wide patient table allows all anatomy to be comfortably imaged at iso-center with exceptional imaging quality

primeFSE reduces susceptibility artifact from metal prosthesis



High resolution 1.2mm isoFSE acquisition and high image quality axial reformat



T2 RelaxMap for advanced cartilage assessment

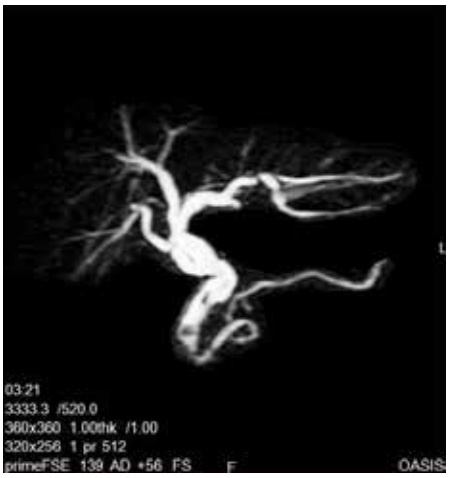
Excellent cartilage depiction with RSSG Fat Saturation sequence

FatSep fat only and water only image displaying excellent image quality

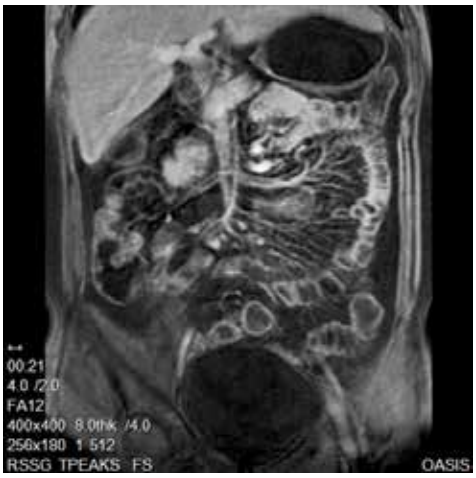
Body imaging is one of the most demanding areas of MRI, ranging from large organs including the liver, to small anatomies such as adrenal glands, to more advanced imaging including prostate and cardiac. All of these different anatomical areas have unique imaging requirements. Hitachi delivers a robust suite of imaging acquisitions and tools including motion compensation and fast dynamic imaging. Higher Order Active Shim Technology (HOAST) supports extended anatomical imaging coverage with uniform fat saturation.

To support the growing demands of body imaging, Oasis capabilities include:

- **RADAR -** Motion compensated free breathing abdominal imaging
- **TIGRE -** Dynamic liver studies benefit from the large FOV and uniform fat suppression
- **DWI -** Provides differential diagnosis capability of benign vs. metastatic lesion in the liver and other abdominal regions
- **Cardiac -** Morphological and functional assessment with dynamic and coronary artery imaging sequences
- **Prostate -** Support multi-parametric prostate imaging and intervention



MRCP with heavy T2 weighting and MIP processing



TIGRE provides superb small and large bowel visualization for enterography

Single-shot FSE 19 second breath-hold provides extensive coverage

TIGRE dynamic liver pre-contrast, arterial phase and venous phase sequences

HOAST provides uniform fat saturation over large FOV

FatSep provides high SNR fat suppression in the abdomen

Oasis is designed to optimize the patient experience for women's health imaging. The open patient-centric design provides added width to ensure patient accommodation and comfort, while helping to relieve patient anxiety. For breast imaging when coupled with the breast coil, Oasis's delivers excellent image quality and broad capability required for this fast growing application. Female pelvic imaging is complimented with extensive motion compensating techniques for high image quality. Hitachi's exclusive H-sinc pulse provides anatomically tailored RF fat saturation, combining with HOAST to ensure higher uniformity and fat saturation consistency.

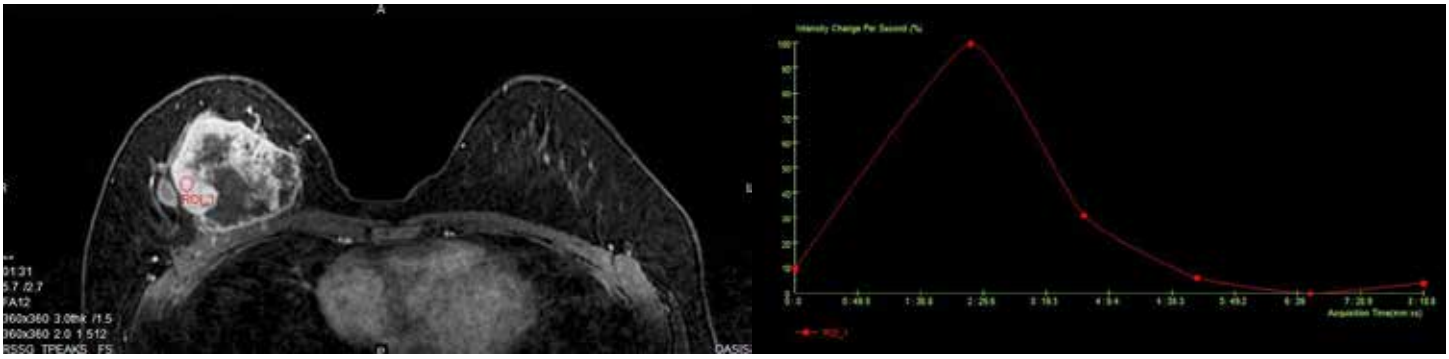
Women's Health imaging advantages include:

- **TIGRE -** T1 weighted 3D gradient echo with high spatial and temporal resolution for dynamic breast imaging
- **RADAR -** High resolution free-breathing acquisitions with motion reduction
- **H-SINC -** exclusive RF fat saturation pulse designed for female pelvic and breast imaging
- Advanced analysis tools on the MR console or data is easily exportable to a workstation or CAD system

TIGRE dynamic breast pre-contrast, peak and late enhancement sequences

RADAR compensates for peristaltic motion in the female pelvis

TIGRE MIP demonstrating vascularity in breast tissue



Dynamic tissue intensity analysis on the Oasis console

The only available high-field open architecture MRI, Oasis delivers outstanding patient comfort and convenience benefits for even your most challenging patients. With an unobstructed viewing angle and widest patient table, no other MRI system enables you to capture and retain as broad of a patient demographic as Oasis. Challenging patients such as bariatric, pediatric, geriatric, anxious and claustrophobic are more comfortably accommodated, and ALL patients appreciate the Oasis environment.

Key aspects of the Oasis design include:

- Unobstructed view offered by our truly open MRI design
- Patient table with three axis motorized movement
  - 660 lbs. patient weight limit – the highest in the industry
  - 82 cm wide table - the widest in the industry
  - In bore lateral movement
  - Lowers to 20” for easy access
- **RADAR -** Most comprehensive motion compensation capability available helps to minimize re-scans and improve image quality

CHALLENGING PATIENTS

Bariatric patients are easily accommodated with high image quality and comfort

RADAR enables high quality diagnostic results even for non-compliant patients

18 second breath-hold acquisition with extended coverage

Patient suffering from acute pain comfortably positioned in Oasis

6 year old scanned without sedation depicting orbital mass

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